Academia

Austrian National Science University	Texas A&M University
Beckman Institute	U.S. Air Force Academy
Bristol University	Universitaet Bonn
California Institute of Technology	Universitaet Erlangen–Nuernberg
Carnegie–Mellon University	University of California, Berkeley
Columbia University	University of California, Davis
Cornell University	University of California, Irvine
Dresden University of Technology	University of California, Los Angeles
Duke University	University of California, San Diego
Georgia Institute of Technology	University of California, Santa Barbara
Heidelberg University	University of California, Santa Cruz
Indiana University	University of Chicago
New Mexico Institute of Mining and Technology	University of Colorado, Boulder
New York University	University of Colorado, Denver
North Carolina State University	University of Illinois
Northwestern University	University of Loeben
Old Dominion University	University of Maryland
Oregon Graduate Institute	University of Michigan
Oregon Health and Science University	University of North Carolina
Penn State University	University of Oregon
Purdue University	University of San Francisco
Rensselaer Polytechnic Institute	University of Tennessee
San Diego Supercomputer Center	University of Utah
San Jose State University	University of Washington
Southwest Texas State University	University of Wisconsin
Stanford University	University of North Carolina
Technical University of Catalonia	Warsaw University
Technical University of Vienna	Worcester Polytechnic Institute

Industry

BlueArc
Cluster File Systems
Etnus
HP
IBM
Intel
Krell Institute
Limit Point Systems
Linux NetworX
MPI Software Technology, Inc.
Network Appliance
Pallas
Quadrics
Red Hat
ZeroFault

National Labs/Government

Argonne National Laboratory
Brookhaven National Laboratory
Lawrence Berkeley National Laboratory
Los Alamos National Laboratory
Oak Ridge National Laboratory
Pacific Northwest National Laboratory
Sandia National Laboratories

Topic	Authors	Web Sites
Computing at Lawrence Livermore	Dona Crawford	http://www.llnl.gov/comp/
Providing Desktops to Teraflops	Michel McCoy	http://www.llnl.gov/asci/
Platform Strategy and Systems	Jim Garlick, Terry Heidelberg, Moe Jette, Doug East	http://www.llnl.gov/asci/platforms/platforms.html
HPC Systems Area Network	Keith Fitzgerald	
Visualization and Data Assessment	Steve Louis	http://www.llnl.gov/asci/views/views.html
User Services	Brian Carnes	http://www.llnl.gov/icc/sdd/
Desktop Support	Kim Cupps	
Laboratory Network Services	Dave Wiltzius	
Cyber Security	Ed Matsche, Ted Michels	
Developing Applications Software	Steven Ashby	http://www.llnl.gov/car/
ASCI Code Development	Evi Dube	http://www.llnl.gov/asci/applications/applications.html
Verification & Validation Work	James McEnerney, George Christianson	
NIF Control System	Larry Lagin, Kim Minuzzo	http://www.llnl.gov/nif/
Bio-Defense	Carol Zhou, Tom Slezak	http://greengenes.llnl.gov/bbrp/html/mccreadyabst.html
Radiation Transport for Cargo Inspection	Peter Brown	http://www.llnl.gov/casc/Ardra/
NARAC	Joe Tull	http://narac.llnl.gov
Coupled Climate – Carbon Modeling	Art Mirin	
First Principles	Francois Gygi	http://www.llnl.gov/str/Gygi.html
Computer Incident Advisory Capability	Denise Sumikawa	http://www.ciac.org/ciac/CIACHome.html
Information Operations And Assurance	Diana Sackett	
Software Quality Assurance	Trish Damkroger, Joyce Moulden	
Engaging in Computing Research	Pete Eltgroth	http://www.llnl.gov/casc/
Scalable Linear Solvers	Robert Falgout, Jim Jones, Carol Woodward, Charles Tong	http://www.llnl.gov/CASC/linear_solvers/
Overture	Lori Feitag-Diachin	http://www.llnl.gov/casc/Overture/
SAMRAI	Richard Hornung	http://www.llnl.gov/casc/SAMRAI/samrai_home.html
Tiling Models for Spatial Decomp.	John Compton	
Performance of Multi-Physics	Rob Neely, John May	
Linux Cluster Software Stack	Doug East, Robin Goldstone, Moe Jette	
Advancing the Code Development Environ.	Mary Zosel, Dan Quinlan	
Scalable Data Management	Terence Critchlow, Randy Frank, Jeff Long	http://www.llnl.gov/CASC/datafoundry/
Scalable Data Mining	Chandrika Kamath	http://www.llnl.gov/casc/sapphire/
Scalable Interactive Data Exploration Tools	Valerio Pascucci	
Sections 5.01-5.02	Jim McGraw	http://www.llnl.gov/iscr/

5.03 Acronyms and Abbreviations

Selected Acronyms and Abbreviations, with Brief Descriptions

AD
Associate Director –LLNL Directorate senior manager
Active Directory – Microsoft proprietary product for administering large/complex systems

ALC—ASCI Linux cluster at LLNL

ALE3D—Arbitrary Lagrangian–Eulerian three-dimensional code

AMR—adaptive mesh refinement

ARGUS—DOE's standard high-security system, protects assets at LLNL, Pantex, INEEL, DOE HQ, and LANL; includes personnel access control booths, alarm stations, map-based alarm reporting systems and a closed-circuit TV video assessment system.

ASC—DHS's Advanced Scientific Computing research program

ASD—automated software delivery, via the tool Radia

ASCI—currently the Advanced Simulation & Computing program for NNSA/DOE, historically the national Accelerated Strategic Computing Initiative

ASCI Alliances—academic institutions hosting ASCI research & development

ASCI Blue–Pacific—existing LLNL/Tri-Lab IBM Silver 344-node system machine for unclassified access, allowing collaborative research access; peak of 1.3 TF

ASCI Purple—proposed 100-TF Tri-Lab machine to be installed at LLNL mid-2005

ASCI White—existing LLNL/Tri-Lab machine composed of three separate systems based upon IBM's POWER3 SP technology. The largest system is a 512-node SMP (16 CPUs/node) system with a peak speed slightly greater than 12 TF

ASIC—application-specific integrated circuit, first delivered to LLNL 6/6/03

BASIS—Biological Aerosol Sentry and Information System; enables early detection of biological pathogens, used at 2000 Olympics

BG/L—BlueGene/L, a 180–360-TF cell-based machine developed in partnership with IBM

BBRP—Biology and Biotechnology Research Program at LLNL

CHAOS—Clustered High-Availability Operating System software stack at LLNL, augments Linux Red Hat with support for HPC clusters

CORBA—Common Object Request Broker Architecture

CSP—Computer Security Program at LLNL

DAG—Desktop Advisory Group at LLNL

DHS—U.S. Department of Homeland Security

Directorate —LLNL organizational unit dedicated to a specific discipline or science, in particular, the Computation Directorate

DM—data mining, the extraction of relevant information from massive data sets

DNT—Defense and Nuclear Technologies Directorate at LLNL

DOE—U.S. Department of Energy
DOE/HQ DOE headquarters in Washington, DC

DSW—Directed Stockpile Work, supports re-certification of weapons systems

FIS—File Interchange Systems

GF—gigaflop, 10^9 floating-point operations/second

GigE—Gigabit Ethernet

HPC—high-performance computing

HPSS—high-performance storage system

HSI—high-speed interconnect

ICCS—NIF's Integrated Computer Control System software

IDR—intrusion detection and response security "fabric" over LLNL networks

INEEL—Idaho National Engineering & Environmental Laboratory (an NNSA Lab)

IPSO—Information Protection Support Organization

ISM—Integrated Safety Management program at LLNL to protect worker/occupational health and safety

LANL—Los Alamos National Laboratory

LC—LLNL Computing Center, the computing infrastructure at LLNL

Linux Software Stack—operating system, parallel file system, and resource management system

LLNL—Lawrence Livermore National Laboratory

M&IC—Mulitprogrammatic and Institutional Computing at LLNL

MCR—11.2-TF, 32-bit microprocessor-based cluster Mulitprogrammatic Capability Resource, combines open-source software with cluster architecture

MPI—message-passing interface

NAI—Nonproliferation, Arms Control and International Security Directorate at LLNL

NFS—network file system

NIF—National Ignition Facility, national research and test center for laser fusion, a Directorate at LLNL

NSF—National Science Foundation

OC–12—622 Mb/s interface

ORNL—Oak Ridge National Laboratory

OTP—one-time password authentication system.

PDE—partial differential equation

PF—petaflop, 10^{15} floating-point operations/second

PSAP—Personnel Security Assurance Program access authorization

PSE—ASCI Tri-Lab Problem Solving Environment

PVC—parallel visualization cluster

R&D 100 Award —R&D Magazine award winner for a product or technology first available for order or license to the private sector during the previous year

SAN—storage area network

SLURM —(Simple Linux Utility for Resource Management), a tool developed by LLNL and Linux NetworX to manage a queue of pending work, allocate access to nodes, and launch and manage parallel jobs

Slow clock —500 Mhz or slower

SNL—Sandia National Laboratories (/CA in California; /NM in New Mexico)

SOC—system-on-a-chip, IBM's proprietary technology for embedding applications

SQA—software quality assurance

SSP—Stockpile Stewardship Program that oversees the safety, security, and reliability using, amoung other methods, the nation's nuclear stockpile high-fidelity weapon simulation capabilities

SWGFS—Site-Wide Global File System

Teller Fellowship Award—LLNL Director's award modeled on the MacArthur Fellowship program, funds the recipient to do a year of self-directed work that will benefit LLNL

TF—teraflop, 10^{12} floating-point operations/second

Thunder—23-TF system, with architecture modeled on MCR

Tri-Valley—Livermore–Dublin–Pleasanton geographic and socio-economic area

TSF—Terascale Simulation Facility under construction at LLNL

VIEWS—ASCI Tri-Lab Visual Interactive Environment for Weapons Simulation